

J. Geelen Coxeter James Prize

The Coxeter-James Prize recognizes young mathematicians who have made outstanding contributions to mathematical research.

Dr. Jim Geelen is already a world leader in the areas of combinatorial optimization and matroid theory. The referees describe him as an "outstanding talent" and a "very creative and original researcher" with a "huge international reputation".

The following are among the highlights of his 30-odd papers. With Gerards and Kapoor, he characterized the matroids representable over the finite field $GF(4)$, which had been considered an impossibly hard problem. Their paper is described as a "huge breakthrough". With Whittle, he has proved that among the set of excluded minors preventing representability of a matroid over a given finite field, there is only a finite number of matroids of a given branch-width. This is remarkably strong evidence in support of the Rota Conjecture.

Dr. Geelen has made important contributions to extending results of the Graph Minors Project from graphs to matroids. This is currently the main focus of matroid theory. A major step in this direction is his result with Gerards and Whittle that binary matroids with large branch-width contain big grids as minors. One of his contributions to combinatorial optimization is a deterministic algorithm for the maximum matching problem, simple to use but theoretically deep.

Dr. Geelen received a Bachelor of Science degree in 1992 from Curtin University in Australia, and a Ph.D. in 1996 from the University of Waterloo under the supervision of Professor William H. Cunningham. After postdoctoral fellowships in the Netherlands, Germany, and Japan, he returned to the University of Waterloo in 1997 and is now an Associate Professor and Canada Research Chair.

He won the Doctoral Prize of the CMS in 1996 and the Fulkerson Prize of the American Mathematical Society and the Mathematical Programming Society in 2003. He received a Premier's Research Excellence Award from the Province of Ontario in 2000 and a Sloan Fellowship in 2002.

Dr. Jim Geelen will present the 2006 Coxeter-James Prize Lecture at the CMS Summer Meeting hosted by the University of Calgary in June 2006.